Our Reference: 2071 Application No. 10/081,401

REMARKS

The instant application was filed on February 22, 2002, and included Claims 1-19. In the Office Action, Claims 1-19 stand rejected under 35 U.S.C. 102(a) as being anticipated by US Patent No. 6,108,295, issued to Ohno et al. on August 22, 2000, hereinafter "Ohno", and Claims 1-19 stand rejected in the alternative under 35 U.S.C. 103(a) as being obvious over Ohno. Examiner's rejections will now be discussed in detail.

1. Claims 1-19 stand rejected under 35 U.S.C. 102(a) as being anticipated or, in the alternative under 35 U.S.C. 103(a) as being obvious over Ohno. Examiner contends that Ohno discloses an optical information recording medium that incorporates a phase change alloy used in an optical disk and that the phase change alloy is used in the recording layer made of a thin film of $My_y(Sb_xTe_{1-x})_{1-y}$, wherein $0 \leq y \leq 0.3$, $0.5 \leq x \leq 0.9$ and My (the Office Action makes reference to "Ma" at page 2, point 3, paragraph 2, however, Applicants assume that is a typo and Examiner, in fact, means "M_y") may be selected from a group which includes In. Further, Examiner contends that the claimed ranges of the present invention are encompassed by the ranges of x disclosed in Ohno. Also, Examiner indicates that a showing a criticality for the claimed ranges in the present invention may overcome the rejection.

Applicants have amended Claims 1 and 9. Applicants' invention is directed to a multi-level recording medium. Ohno does not disclose or suggest a multi-level recording device. Additionally, examples provided by Ohno describing the best way to practice Ohno's invention, are directed to a medium having AgIn(SbTe), rather than the In(SbTe)

memory medium of the Applicants' invention. Although Ohno mentions In as a member of a group of elements that may comprise M_y, Ohno teaches "if it (In) is contained more than 8 atomic %, the phase separation is likely to take place, and segregation is likely to result by repetitive overwriting, such being undesirable." Therefore, Ohno teaches away from a multi-level recording device consisting of In(SbTe), which functions best with an In concentration greater than 8. Further, the embodiments of the present invention teach that multi-level recording devices of the present invention are preferably Ag free, as disclosed in the Applicants' application at page 10, line 5.

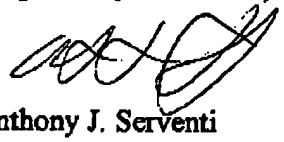
Applicants Claims 8-19 give elements of a multi-level recording device not disclosed or suggested by Ohno. Specifically, embodiments of the present invention disclose the use of phase change memory materials in a multi-level recording device that have different characteristics than the phase change materials of Ohno. Please refer to Table 1 of the Applicants' application on page 9 and Figure 3 for comparisons that show the AgInSbTe of Ohno systems are physically different from the InSbTe systems of the present invention. Referring to Table 1, the InSbTe systems of the present invention selectively crystallize with a two-pulse, or slow cooking method at both high and low speeds, in contrast to the AgInSbTe systems preferred in Ohno.

2. Applicants are making the following publications of record. The document marked "A" is "Materials Characteristics for High Performance Multi-Level Recording with InSbTe Phase-Change Materials" by Daly-Flynn et al. and the document marked "B" is "InSbTe Phase-Change Materials for High Performance Multi-Level Recording" by Daly-Flynn et al. Jpn. J. Appl. Phys. Vol. 42 (February 2003) pp. 795-799, copies of

which are provided with this response. The papers describe improved performance and different features of In(SbTe) multi-level recording devices, over AgIn(SbTe). As a result, the claimed elements of Applicants' invention cannot be inherent and are non-obvious.

3. In view of the discussion as set forth above and the papers provided, Applicants contend that all rejections have been overcome and Claims 1-19 are in condition for allowance. Claims 1 and 9 have been amended and Applicants respectfully request reconsideration of the present application. Applicants respectfully request that Examiner withdraw the rejections and objections and that a timely notice of allowance be issued with Claims 1-19. Should the Examiner have any comments or suggestions that would place the instant application in better condition for allowance, please contact the undersigned.

Respectfully Submitted,



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